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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/741,827	12/19/2003	Robert N. Phelps	2003P14534US	6172

7590 11/16/2006

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
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EXAMINER	
JASANI, ASHISH S	

ART UNIT	PAPER NUMBER
3737	

DATE MAILED: 11/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/741,827	PHELPS ET AL.	
	Examiner	Art Unit	
	Ashish S. Jasani	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/19/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 6-8, 11-13, 15-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright et al. (USPN 6016285) in view of Bunce (USPN 6371918).

Wright et al. teaches of a beamforming receive apparatus (Figure 4a) which includes an ADC, demodulator, summer. The demodulator is used to reduce the number of output lines in comparison to the number of transducer elements. Wright et al. teaches that time-division multiplexing can be used in place of the demodulator (column 22, lines 14-29). Wright et al. does not teach of a detachable transducer cable.

Bunch teaches of a transducer connector in order to detach the transducer assembly from the processing unit.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to combine the Wright et al. beamforming system with the Bunce transducer connector to reduce size, weight and complexity (column 1, lines 36-47).

3. Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright et al. (USPN 6016285) in view of Bunce (USPN 6371918) in further view of Breimesser et al. (USPN 5622177).

Wright et al. teaches of a beamforming receive apparatus (Figure 4a) which includes an ADC, demodulator, summer. The demodulator is used to reduce the number of output lines in comparison to the number of transducer elements. Wright et al. teaches that time-division multiplexing can be used in place of the demodulator (column 22, lines 14-29). Wright et al. does not teach of a detachable transducer cable and Wright et al. does not teach of a reduction of output lines.

Bunch teaches of a transducer connector in order to detach the transducer assembly from the processing unit.

Breimesser et al. teaches of using multiplexing and de-multiplexing in conjunction with switches (Figure 1, elements W_{ij}) in order to reduce the number of output lines.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to combine the Wright et al. beamforming apparatus with the Bunce transducer connector and the Breimesser et al. output line reduction in order to reduce system complexity, weight, and size.

4. Claims 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright et al. (USPN 6016285) in view of Bunce (USPN 6371918) in further view of Bamber (USPN 5538004).

Wright et al. teaches of a beamforming receive apparatus (Figure 4a) which includes an ADC, demodulator, summer. The demodulator is used to reduce the number of output lines in comparison to the number of transducer elements. Wright et al. teaches that time-division multiplexing can be used in place of the demodulator (column 22, lines 14-29). Wright et al. does not teach of a detachable transducer cable and Wright et al. does not teach of a using a serializer in conjunction with the ADC.

Bunch teaches of a transducer connector in order to detach the transducer assembly from the processing unit.

Bamber teaches of using a serializer in the ultrasound transducer apparatus. It is well known in the art that a serializer is used in conjunction with an ADC in order to improve output bandwidth.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to combine the Wright et al. beamformer apparatus with the Bunce transducer connector and the Bamber serializer in order to reduce system complexity, weight, and size and to improve output bandwidth.

5. Claim 24 rejected under 35 U.S.C. 103(a) as being unpatentable over Wright et al. (USPN 6016285) in view of Bunce (USPN 6371918) in further view of official notice.

Wright et al. teaches of a beamforming receive apparatus (Figure 4a) which includes an ADC, demodulator, summer. The demodulator is used to reduce the number of output lines in comparison to the number of transducer elements. Wright et al. teaches that time-division multiplexing can be used in place of the demodulator

(column 22, lines 14-29). Wright et al. does not teach of a detachable transducer cable and Wright et al. does not teach of a using a serializer in conjunction with the ADC.

Bunch teaches of a transducer connector in order to detach the transducer assembly from the processing unit.

Examiner takes official notice that it is well known in the art to use cables of constant length and constant impedance in order to reduce signal noise.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to combine the Wright et al. beamformer apparatus with the Bunce transducer connector and the official notice of constant cable length and impedance in order to reduce system complexity, weight, and size and to increase SNR.***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashish S. Jasani whose telephone number is 571-272-8025. The examiner can normally be reached on Mon. - Fri. 9:30 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571) 272 - 4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ASJ

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